EXPLORING THE CHALLENGES AND BARRIERS FACED BY ALLIED HEALTH STUDENTS IN DEVELOPING LEADERSHIP SKILLS: A QUALITATIVE STUDY

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ABSTRACT

Objective: To explore the challenges and barriers faced by allied health sciences students in developing leadership skills.

Methods: This qualitative phenomenological study was conducted from December 2024 to May 2025 to explore the challenges and barriers faced by allied health sciences students in developing leadership skills during their undergraduate education. Fifteen undergraduate students from six allied health sciences disciplines were recruited through maximum-variation purposive sampling. Data were collected using a semi-structured, validated interview guide for in-depth interviews. The interviews were analyzed using Braun and Clarke's thematic analysis framework. To enhance the credibility, reliability, and trustworthiness of findings, data triangulation, reflexive journaling, peer debriefing, and member checking were ensured.

Results: The thematic analysis identified six key themes related to the perspectives of allied health sciences students regarding the challenges and barriers in developing leadership skills (1) curriculum gaps and limited leadership integration, (2) time management and competing academic demands, (3) institutional and resource constraints, (4) faculty support and mentorship, (5) cultural and gender-based barriers, and (6) personal growth, reflection, and emotional resilience. Students highlighted the lack of formal leadership training, limited mentorship, and sociocultural norms that constrained leadership expression. Participants viewed emotional intelligence, self-confidence, and adaptability as foundational to leadership success and called for training activities that integrate reflection, mindfulness, and peer support.

Conclusion: Leadership development among allied-health students in Pakistan is constrained by curricular, institutional, and cultural barriers. Integrating structured leadership modules, strengthening mentorship, and promoting reflective and inclusive learning practices can enhance readiness for leadership roles in interdisciplinary healthcare settings.

Keywords: Leadership skills; Allied-health Sciences Education; Qualitative study; Mentorship; Emotional intelligence; Curriculum reforms.

INTRODUCTION

Leadership has emerged as an important competency in healthcare, influencing clinical outcomes, interprofessional collaboration, organizational performance, and patient safety [1,2]. Effective leaders in healthcare foster teamwork, drive innovation, and ensure ethical decision-making within complex systems.

Allied health care professionals such as physiotherapists, technologists, occupational therapists, and speech and language pathologists, occupy integral positions in multidisciplinary teams with leadership and communication skills to enhance patient outcomes and operational efficiency. Globally, frameworks such as the UK NHS Leadership Academy[3], the Can MEDS Roles, and the World Federation for Medical Education 2020 standards emphasize leadership as a core competency. Despite this, many LMICs lag in incorporating leadership education within undergraduate allied health sciences programmes and health systems [3,4].

In Pakistan, allied health curricula are traditionally structured around technical proficiency and clinical competence, with limited attention to the cognitive, emotional, and relational dimensions of leadership [2]. This gap

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often produces graduates who are technically skilled but underprepared for real-world challenges involving team management, communication, negotiation, and strategic problem-solving. Healthcare leadership extends beyond administrative authority and encompasses vision, empathy, self-awareness, and the capacity to inspire and guide others toward collective goals [7,8]. Consequently, the absence of leadership training limits the preparedness of allied health graduates to assume roles in clinical governance, quality improvement, and health systems leadership.

The literature increasingly underscores that leadership can be taught, practiced, and nurtured through structured educational experiences [9,12]. Early exposure to leadership activities such as project coordination, reflective journaling, peer mentoring, and simulation-based exercises has been shown to enhance confidence, critical thinking, and team effectiveness. However, institutional constraints such as insufficient faculty expertise, time pressures, and a lack of policy prioritization frequently undermine such initiatives [5,15]. In Pakistan, cultural expectations and gender norms further restrict leadership expression, particularly among female students, reinforcing hierarchical traditions within health education and service delivery [2,5,15]. To build a sustainable healthcare leadership pipeline, it is crucial to understand the contextual challenges and barriers that allied health sciences students face during their undergraduate education. Identifying these barriers can guide the development of evidence-based curricular frameworks, mentorship models, and institutional reforms that foster leadership capabilities aligned with cultural and professional realities. This study, therefore, aimed to explore the lived experiences of allied health students in Pakistan regarding leadership development, with particular focus on the systemic, cultural, and educational factors shaping these experiences.

MATERIALS AND METHODS

This qualitative phenomenological study was conducted from December 2024 to May 2025 after approval by the Khyber Medical University Advanced Studies and Research Board (KMU-AS&RB) in its 166th meeting held on December 12, 2024. (No: DIR/KMU-AS&RB/BG/003058). Ethical approval was taken from the KMU-IHPER Ethics Board (Ref No:1-12/IHPER/MHPE/KMU/25-12 Dated: April 10, 2025). The study was conducted at the University of Child Health Sciences (UCHS), Lahore, a tertiary-level academic institution offering multiple allied health science programs under the Faculty of Allied Health Sciences. The institution was selected for its diversity of disciplines and accessibility to undergraduate students across different stages of professional education. The study explored the lived experiences of allied health students' development of leadership skills during their undergraduate education. The phenomenological design was chosen because it enables an in-depth understanding of participants' subjective perceptions and meanings associated with their educational and personal experiences. This approach was particularly suitable for examining leadership as a socially constructed phenomenon within educational and cultural contexts[15]. Undergraduate students enrolled in the 3rd & 4th years of allied health programs, including Physiotherapy, Medical Imaging Technology, Medical Laboratory Technology, Occupational Therapy, Operation Theatre Technology, and Speech and Language Pathology were included in the study. The participants had participated in any form of clinical or leadership activity (formal or informal), and provided informed consent for participation. Students who expressed unwillingness to participate in the study were excluded. A maximum-variation purposive sampling strategy was employed to ensure heterogeneity in gender, discipline, and academic year. This technique was appropriate for capturing a wide range of perspectives regarding leadership learning experiences. Fifteen participants were recruited, which allowed sufficient depth and breadth of data while maintaining feasibility for qualitative analysis. Recruitment continued until data saturation was reached, that is, no new codes or themes were emerging from additional interviews. Data were collected through semi-structured, in-depth interviews guided by a validated interview guide. Interviews were conducted via online ZOOM platform and also face-to-face, depending on participants' convenience and ethical safety considerations. Interviews lasted between 25 and 45 minutes**.** Interviews were audio-recorded and supplemented by field notes capturing non-verbal cues and contextual observations. The study data transcription was performed manually to minimize the risk of errors and ensure that the nuances of the participants' responses were preserved. Once transcription was complete, the data was securely stored in Microsoft Excel, providing an organized framework for further analysis. Transcripts were cross-checked by an independent

reviewer to enhance credibility. Data confidentiality was ensured by assigning pseudonyms and removing any identifying information. Data analysis was done using Braun and Clarke's thematic analysis framework[16]. The analysis involved coding and thematic analysis, performed manually to identify key themes. As the analysis progressed, data were further categorized into subthemes. The data triangulation was done among study participants and authors to avoid any misinterpretation. The transferability of the findings is supported by the study's diverse sample. To enhance the credibility, reliability, and trustworthiness of findings, data triangulation, reflexive journaling, peer debriefing, and member checking were ensured.

Themes were finalized after achieving consensus among researchers and were supported by direct participant quotes to illustrate authentic voices. The final analysis aimed to capture both shared and unique aspects of the students' lived experiences.

RESULTS

Fifteen undergraduate allied health sciences students participated in this study. Among them, 10 were females and 5 males, aged 21–25 years, enrolled in their third or fourth year of study. A total of six themes with twelve subthemes emerged after the data analysis (Figure-1).

Figure-1: Themes and Subthemes generated after coding the students' perspectives

The themes, subthemes and the participants representative quotes are shown in Table-1.

Table 1. Exploring the Challenges and Barriers Faced by Allied Health Students in Developing Leadership Skills

Theme	Sub-themes	Participant quotations
Curriculum gaps and limited leadership integration	• Lack of structured leadership modules • Minimal experiential learning	*- "I feel there's a gap in integrating leadership into our curriculum. I wish we had practical leadership simulations, role play sessions and workshops."* ***(F,P#2)*** *- "It's difficult to reconcile our studies with leadership. We need more time."* ***(F,P#1)*** *- "We are constantly juggling between academic responsibilities and leadership development, which feels like an additional burden."* ***(F,P#6)*** *- "Leadership and teamwork are not addressed in our curriculum because it focuses mainly on technical content."* ***(M,P#15).*** *- "We learn leadership by chance and not through formal training."* ***(F,P#10)***
Time management and competing demands	• Academic overload • Difficulty balancing clinical and leadership work	*- "It's hard to engage in leadership when every day is filled with labs and ward duties."* ***(M,P#5)*** *- "Managing both leadership and academic workload is difficult, but I try to set aside time for leadership."* ***(F,P#6)*** *- "We are constantly trying to balance study and clinical work; leadership becomes a secondary thing."* ***(F,P#7)***
Institutional and resource constraints	• Lack of infrastructure and programs • Limited exposure opportunities	*- "Our university doesn't have leadership societies or mentorship circles."* ***(F,P#7)*** *- "Leadership training is not institutionalized and it depends on individual effort."* ***(M,P#9)*** *- "We need workshops and inter-institutional collaborations to learn leadership properly."* ***(M,P#5)***
Faculty support and mentorship	• Inconsistent guidance • Need for trained mentors	*- "Faculty support for leadership is minimal, but I think it's crucial for growth."* ***(F,P#7)*** *- "Some faculty members are more involved and willing to support leadership development, but others don't provide much guidance."* ***(F,P#2)*** *- "Having a mentor would make a huge difference, but teachers focus only on academics."* ***(M,P#9)*** *- "Faculty mentorship isn't structured; it's left to personal interest."* ***(F,P#11)*** *- "Leadership guidance should be part of teachers' role, not an optional favor."* ***(F,P#10)***
Cultural and gender-based barriers	• Gender bias • Leadership linked with seniority or masculinity	*"Cultural barriers make it difficult to step into leadership roles for women."* ***(F,P#1)*** *"In our culture, leadership is frequently connected with seniority. I feel hesitant to go up because of the prevailing assumption that younger people should not lead."* ***(M,P#3)*** *- "I hesitate to lead clinical teams; leadership is seen as a male domain."* ***(F,P#6)*** *- "Younger students are discouraged from taking initiative and it's all about hierarchy."* ***(M,P#12)*** *- "Cultural attitudes limit how openly we can express leadership."* ***(F,P#13)***

Personal growth, reflection, and emotional resilience	• Self-reflection and confidence • Stress and emotional intelligence	- *"Self-reflection helps me understand what kind of leader I want to be."* ***(F,P#11)*** - *"Managing stress has been my biggest leadership lesson."* ***(M,P#15)*** - *"Leadership is emotional work and learning to stay calm and empathic is essential."* ***(F,P#6)***

***M: Male, F: Female, P: Participant**

DISCUSSION

This study explored allied-health sciences students' lived experiences of leadership development within a Pakistani university context. The analysis generated six interconnected themes: curriculum gaps**,** time pressures**,** institutional/resource constraints**,** faculty mentorship**,** cultural and gender-based barriers, and personal growth via reflection and emotional resilience that collectively depict how system-level and contextual conditions shape students' leadership trajectories. The findings align with international literature arguing that leadership is a learned, practice-based competency that requires structured space, mentoring, and supportive climates to flourish[1-3,7,10].

Curriculum gaps and the hidden curriculum of leadership

Participants consistently described leadership as peripheral to technically focused curricula. Similar gaps are reported across undergraduate health programs, where leadership outcomes are rarely mapped, taught, and assessed with the same precision as clinical competencies.[3,6,9] In line with prior reviews, experiential formats such as simulation, projects, quality-improvement (QI) work, and student-led initiatives are more likely to cultivate leadership identity and teamwork than didactic exposure alone.[3,6,9,12] The findings reinforce calls to explicitly integrate leadership competencies within course objectives and assessments.[3,6,9]

Time pressures and workload crowding

Students described leadership skills as "non-essential" amid dense academic and clinical schedules, echoing reports that workload crowding displaces non-technical competency formation [3,6]. Without protected time, leadership learning remains ad hoc and inequitably accessed. International initiatives that incorporate leadership into coursework or clinical rotations, and not as extra-curricular add-ons, are associated with higher engagement and transfer to practice[3,6,9].

Institutional and resource constraints

Perceived lack of infrastructure, programming, and partnerships constrained leadership opportunities, mirroring resource-limited contexts where leadership remains under-prioritized in policy and budgeting [2,4,6,9]. Institutional measures like leadership tracks, student councils with real remit, cross-institutional collaborations, and recognition systems have been shown to normalize participation and sustain practice opportunities [6,9,12,13].

Faculty support and mentorship

Mentorship surfaced as a pivotal but inconsistently available. Prior work shows that coaching and role-modelling are among the strongest drivers of leadership identity and confidence formation [1,6,10,13–15]. Participants mentioned structured mentoring with faculty-development in leadership coaching (e.g., feedback, reflective dialogue, project supervision) improves learner outcomes and program legitimacy [10,13–15].

Cultural and gender-based barriers

Students, especially women, described leadership as culturally linked to hierarchy and masculinity, reducing psychological safety to speak up or take initiative. This resonates with regional and international reports on gendered leadership norms and steep hierarchies in health training [2,5,15]. Addressing these dynamics requires inclusive pedagogy, explicit anti-bias work, and leadership opportunities that are visibly accessible to all learners irrespective of gender**,** alongside faculty role-modelling of equitable team practices [2,4,7,15].

Personal growth, reflection, and emotional resilience

Despite structural barriers, participants described self-reflection, emotional intelligence (EI), and stress management as important for leadership growth. Literature supports reflective and mindful-leadership pedagogies for enhancing resilience, self-awareness, and

ethical judgment under pressure [6,12,13]. Such approaches are particularly salient in high-demand educational environments, where students must navigate uncertainty and interprofessional dynamics [5,12–14]. Integrating guided reflection, peer-mentoring, and mindfulness micro-skills may therefore strengthen leadership identity formation within existing resource constraints [5,11,13].

In conclusion, leadership development for allied-health sciences students is constrained by curricular omission, workload pressures, institutional deficiency of resources, and sociocultural dynamics, yet students demonstrate adaptive growth through reflection and emotional self-management. Incorporating mapped and assessed leadership curricula, enabling mentored experiential learning, and cultivating inclusive, reflective cultures are realistic, evidence-informed strategies to build a sustainable leadership training structure in allied-health sciences education [1–4,7,10,13–15].

Strengths and limitations

A strength of this study is its phenomenological depth across multiple allied-health sciences disciplines, offering a contextually grounded view of leadership learning. Use of a reflexive, iterative analysis process enhanced credibility. However, the modest sample limits transferability. Future work should include multi-site studies and longitudinal evaluations of integrated leadership interventions to examine impacts on competence, identity, and patient-care processes.

CONCLUSION

This study revealed that allied-health sciences students in Pakistan encounter multiple systemic, contextual, and personal barriers in developing leadership skills. Leadership remains an under-addressed area within allied-health sciences curricula, constrained by limited institutional resources, inadequate mentorship, and sociocultural expectations that restrict student agency, particularly for women. Despite these obstacles, students demonstrated strong intrinsic motivation and adaptive strategies, using reflection, emotional intelligence, and resilience to shape their emerging leadership identities. Integrating leadership modules into curricula, strengthening faculty mentorship capacity, and fostering inclusive, supportive learning environments are essential to preparing future healthcare leaders. By embedding reflection, teamwork, and emotional intelligence within professional education, institutions can cultivate graduates capable of leading interdisciplinary teams and driving systemic change in Pakistan's evolving healthcare landscape.

Authors' Contributions

Author	Area of contribution
Brekhna Jamil	1) Conception and design of this study. 2) Data interpretation & drafting of the Manuscript. 3) Has given final approval of the version to be published. 4) Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Muhammad Mateen Shahid	1) Acquisition of data, Analysis, and Interpretation of data. 2) Drafting the manuscript. 3) Has given final approval of the version to be published. 4) Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Nowshad Asim	1) Substantial contributions to analysis & data interpretation. 2) Critically revising the manuscript for its intellectual content & proof reading of the manuscript. 3) Has given final approval of the version to be published. 4) Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity

	of any part of the work are appropriately investigated and resolved.
Ruqayya Shahid	1) Acquisition of data 2) Analysis and Interpretation of data. 3) Has given final approval of the version to be published. 4) Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Ayesha Bibi	1) Critically revising the manuscript for its intellectual content & proof reading of the manuscript. 2) Has given final approval of the version to be published. 3) Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

DECLARATIONS

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Availability of Data and Materials

Data are stored securely on the principal investigator's encrypted device and are available from the corresponding author upon reasonable request.

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